

Claims

1. A sensor having a housing in which a transmitting antenna array for transmitting electromagnetic transmission signals in a radiation area, and a receiving antenna array for receiving reception signals which are reflected at at least one object within the radiation area are arranged, characterized in that the transmitting antenna array is designed to transmit transmission signals in a main radiation area (3) and in a secondary radiation area (4) which is at an angle thereto, and in that the receiving antenna array (RX) is configured to receive reception signals which are reflected in both radiation areas (3, 4).
2. The sensor as claimed in claim 1, characterized in that the transmitting antenna (1) is actuated in such a way that the main radiation area (3) is at an acute angle to a geometric orientation of the transmitting antenna (1).
3. The sensor as claimed in claim 1 or 2, characterized in that the transmission range in the main radiation area (3) is more than twice as large as in the secondary radiation area (4).
4. The sensor as claimed in claim 3, characterized in that the transmission range in the main radiation area (3) is more than four times as large as in the secondary radiation area (4).
5. The sensor as claimed in claim 3 or 4, characterized in that the range is between 30 and 50 m in the main radiation area (3), and is between 2 and 10 m in the secondary radiation area (4).
6. The sensor as claimed in one of claims 1 to 5, characterized in that the receiving antenna array (RX)

- 8 -

has two receiving antennas (9, 10), one of which is aligned with the main radiation area (3), and the other of which is aligned with the secondary radiation area (4).

5

7. The sensor as claimed in one of claims 1 to 5, characterized in that the receiving antenna array (RX) has at least one receiving antenna which is configured to receive reception signals which are reflected from both radiation areas (3, 4).

10

8. The sensor as claimed in one of claims 1 to 7, characterized in that the transmitting antenna (1) is a planar antenna.

15

9. The sensor as claimed in one of claims 1 to 8, characterized in that the at least one receiving antenna (9, 10) is embodied as a planar antenna.

10. The sensor as claimed in one of claims 1 to 9, characterized in that it is configured to transmit and receive radar signals.

20

11. The sensor as claimed in one of claims 1 to 10, characterized in that the transmitting antenna array has a transmitting antenna (1) which transmits the transmission signals both in the main radiation area (3) and in the secondary radiation area (4).

25